IN THE CLAIMS

Please amend claims 1, 4, 10, and 22 as indicated below.

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1. (Currently Amended) An iterative computer-implemented process for creating an entity that approximately satisfies a design requirement that at least one characteristic is not in a preexisting art, the process invoking iterations, each iteration comprising:

    selecting at least one candidate entity, wherein selection is more likely for a first

        candidate entity to satisfy a design requirement than a second candidate entity and

        for the first candidate entity to avoid <u>at least one characteristic of</u> a preexisting art

        than the second candidate entity; and

    creating at least one new candidate entity by creating a variation in the at least one

        candidate entity <u>that satisfies the design requirement and avoids at least one</u>

        <u>characteristic of the preexisting art</u>.

2. (Original) The process defined in Claim 1 wherein creating at least one new candidate entity comprises mutating the at least one candidate entity.

3. (Original) The process defined in Claim 2 wherein selecting the at least one candidate entity is performed by simulating annealing.

4. (Previously Presented) The process defined in Claim 2 wherein selecting at least one candidate is performed by hill climbing.

5. (Original) The process defined in Claim 1 wherein the at least one candidate entity is a member of a population of entities.

6. (Original) The process defined in Claim 5 wherein creating at least one new candidate entity comprises performing a crossover operation among a group of candidate entities, the group of entities comprising the selected entity and at least one other entity from the population, the at least one new coordinate entity created by crossover comprising at least a portion of the selected entity and at least a portion of that at least one other entity.

7. (Original) The process defined in Claim 1 further comprising performing genetic programming operations.

8. (Currently Amended) The process defined in Claim 1 further comprising genetic ~~algorithms~~ algorithm operations.

9. (Currently Amended) The process defined in Claim 1 wherein the at least one ~~of~~ candidate entity comprises at least one externally invokable sub-entity and at least one internally invokable sub-entity, the at least one externally invokable sub-entity capable of including at least one invocation of the at least one internally invokable sub-entity.

10. (Currently Amended) The process defined in Claim 9 wherein the at least one ~~of~~ candidate entity comprises at least two internally invokable sub-entities and wherein at least one of the at least two internally invokable sub-entities includes at least one invocation of another of the at least two internally invokable sub-entities.

11.   (Currently Amended)   The process defined in Claim 9 wherein the at least ~~of~~ one

candidate entity has at least one internally invokable sub-entity that includes at least one

invocation of itself.

12.   (Original)   The process defined in Claim 1 wherein creating at least one new

candidate entity comprises performing an architecture-altering operation involving at least one

internally invokable sub-entity of the at least one selected entity.

13.   (Original)   The process defined in Claim 1 further comprising creating the at least one

candidate entity by a random process.

14.   (Original)   The process defined in Claim 1 further comprising supplying, from an

external source, the at least one candidate entity partially satisfying the design requirement or

that only partially reads on the prior art.

15.   (Original)   The process defined in Claim 1 wherein selecting a candidate entity that

more closely satisfies the design requirement is ascertained by evaluating the candidate entity by

simulating the candidate entity.

16.   (Original)   The process defined in Claim 1 wherein selecting the candidate entity that

more closely satisfies the design requirement is ascertained by evaluating the candidate by

observing a physical realization representing the candidate entity.

17. (Original)   The process defined in Claim 1 wherein the candidate entity conforms to a
constrained syntactic structure.

18. (Original)   The process defined in Claim 1 wherein the candidate entity comprises an
electrical circuit.

19. (Original)   The process defined in Claim 1 wherein the candidate entity comprises a
controller.

20. (Original)   The process defined in Claim 1 wherein the candidate entity comprises an
antenna.

21. (Original)   The process defined in Claim 1 wherein the candidate entity comprises a
mechanical system.

22. (Previously Presented)   An iterative computer-implemented process for creating an entity

that approximately satisfies a design requirement that includes technical requirements and

dissimilarity to a preexisting technology, the process invoking iterations, each iteration

comprising:

      producing a structure;

      determining behavior and characteristics of the structure;

      comparing the structure to a preexisting technology;

      determining fitness of the structure by combining compliance with the technical

            requirements and dissimilarity to the preexisting technology.

23.   (Currently Amended)   A machine-readable medium having stored thereon executable code which causes a machine to perform a process, for creating an entity that approximately satisfies a design requirement that at least one characteristic is not in a preexisting art, the process invoking iterations, each iteration comprising:

selecting at least one candidate entity, wherein selection is more likely for a first candidate entity to satisfy a design requirement than a second candidate entity and for the first candidate entity to avoid <u>at least one characteristic of</u> a preexisting art than the second candidate entity; and

creating at least one new candidate entity by creating a variation in the at least one candidate entity <u>that satisfies the design requirement and avoids at least one characteristic of the preexisting art.</u>